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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,544	03/26/2004	Kazuhide Kanemura	Q80614	6128

23373 7590 11/02/2006

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EXAMINER	
WOLLSCHLAGER, JEFFREY MICHAEL	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,544	KANEMURA, KAZUHIDE	
	Examiner	Art Unit	
	Jeff Wollschlager	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-8 and 10-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 10-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment to the abstract, specification and claims filed August 3, 2006 has been entered. Claims 3, 9, and 19-21 have been cancelled. Claims 1, 4, 5, 10, 11, 13-15 and 18 are currently amended. Claims 1, 2, 4-8, and 10-18 are pending.

The objection to the abstract, specification and claims is withdrawn. Further, the rejection of claims 19-21 under 35 U.S.C. 112, Second Paragraph and 35 U.S.C. 101 is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4-8, and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (U.S. Patent Application Publication 2001/0009312; published July 26, 2001; now U.S. Patent 6,582,645) in view Tasaka et al. (U.S. Patent 6,814,914; issued November 9, 2004; priority date May 30, 2001).

Regarding claim 1, Takeda teaches a solution casting method for producing a polymer film from a dope solution containing a polymer and a solvent (abstract) comprising the steps: casting the dope solution from a casting die on a substrate/metal belt to form a gel-like film (paragraph [0083]; and Figure 1, elements (1), (2), (3)), drawing the film in a tangential direction of the substrate/metal belt to peel the film from

the substrate at a speed of at least 10 m/min (paragraph [0083]; Figure 1, elements (4), (2'); Figure 2, note element 2' relative to elements (3) and (34); and paragraph [0016], teaching a speed of 40 m/min to 120 m/min), regulating to less than 20 mm a movement in which a peeling position of the film moves on the substrate (paragraphs [0026], [0027], [0042], [0092], [0104-0105] and [0113]), and drying the peeled gel to obtain the polymer film (paragraph [0083]) wherein a peeling roller is used for peeling said gel-like film (Figure 1, elements (4)).

Takeda teaches that the quality of the produced film is better when the fluctuation, relative to the peeling point, is less than 20 mm (paragraphs [0104,0105, 0113]. Takeda additionally teaches that the peeling roll is adjusted in a vertical direction (see Figure 7, element (44), for example) to produce a high quality film by maintaining a constant angle formed by the web with the metal support (paragraph [0026]). Clearly, in order to maintain a constant angle, the adjustment takes place when the fluctuation is less than 20 mm since Takada necessarily wants to make a high quality film possible.

Further, Takeda teaches that the amount of solvent remaining in the film when the peeling force is applied to remove the film from the substrate/metal belt impacts the quality of the film produced. Takeda also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]) showing that good results are achieved at solvent levels of less than 40% (paragraph [0004]) and between 70-120% (paragraph [0072). Additionally, Tasaka et al. also teach that the impact of the residual solvent level in the film at the time of peeling has a strong impact

on the quality of film produced (col. 18, lines 45-67) and exemplifies a range of 5 - 150%, with a preferred range of 5 – 120% (col. 19, lines 4-5).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to produce a solution cast film with a solvent level in either one of the claimed ranges as is taught by both Takeda and Tasaka et al. for the purpose as taught by both Takeda (paragraphs [0004, 0005, 0072, 0092) and Tasaka et al. (col. 18, lines 45-67) of producing a high quality film.

As to claim 2, Takeda teaches that the peeling roll is adjusted to maintain a constant angle formed by the web with the substrate/metal belt (paragraph [0026]). In view of the teaching of Takeda to constantly maintain the angle, it is understood that constantly means the angle is being controlled, which means the angle is moving, at least four times in one second. Further, the examiner notes that claim 2 does not appear to include a manipulative step.

As to claim 4, Takeda teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]). Additionally, Takeda teaches the web contacts the roll within 5 seconds, more preferably within 3 seconds after being peeled from the substrate/metal belt [paragraph [0076]). Further, Takada teaches movement of the adjustable peeling roll, on the order of magnitude of 100 mm (paragraph [0127]). At speeds of 40 m/min – 120 m/min, the calculated length of the internal common tangent of the peeling roller and the substrate/metal belt ranges from 0 mm – 10,000 mm. Takada's teaching clearly is toward the low end of the range. One having ordinary skill would have been motivated at the time of the invention to

minimize the amount of time the film were unsupported to prevent excessive sag, film breakage and to provide the film with good support (paragraph [0005]).

As to claim 5, Takeda teaches the substrate is adjusted in the range of 10 °C to 40 °C (paragraph [0074], teaches a range of 0 °C to 50 °C, and [0101], provides an example at 10 °C).

As to claim 6, Takada teaches a preferable peeling speed of up to 120 m/min (paragraph [0016]). The claimed range is 0 – 150 m/min. Takeda teaches a speed within the claimed range.

As to claim 7, Tasaka et al. teach an analogous method of producing a film on a substrate where the film is on the substrate for 1 minute (col. 32, lines 18-24). Therefore it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Takeda and Tasaka et al. to solution cast a film where the film is on the belt for a controlled time, such as 1 minute, because Tasaka et al. teaches that under drying and over drying the film has a negative impact on the quality of film produced (col. 18, lines 46-54). The time the film is on the belt directly correlates to the dryness of the film and would have been readily optimized for quality and productivity purposes as is routinely practiced in the art.

As to claim 8, Takeda teaches the substrate/belt temperature is in the range from 0 °C to 50 °C. This would implicitly heat the film to a temperature within the claimed range. As such, the claimed range and the range of the prior art overlap. Additionally, Tasaka et al. teach the temperature range at the peeling site is 10 °C to 40 °C (col. 19, lines 1-3)

As to claims 10 –11, Takeda teaches that the amount of solvent remaining in the film when the peeling force is applied to remove the film from the substrate/metal belt impacts the quality of the film produced. Takada also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]). Takeda does not expressly specify specific solvent criterion relative to a film thickness of 60 micrometers.

However, Tasaka et al. teach an analogous method of producing a film from solution casting wherein the film thickness ranges from 40 to 150 micrometers (col. 1, lines 60-64). Tasaka et al. also teach that the impact of the residual solvent level in the film at the time of peeling has a strong impact on the quality of film produced (col. 18, lines 45-67). Therefore, the level of solvent in the film at the time of peeling films of various thicknesses is a well recognized result effective variable in the art of solution casting films. So, one of ordinary skill would have had to take the level of solvent remaining in the film at the time the peeling force was applied in to account to produce a film of adequate quality. The level of solvent would have been readily optimized as is routinely performed in the art.

As to claim 12, Tasaka et al. teach the solvent level at the time of peeling is in the range of 5 to 150% by weight (col. 18, lines 45-67; col. 19, lines 4-5). Further, Takeda also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]) showing that good results are achieved at solvent levels of less than 40% (paragraph [0004]) and between 70-120% (paragraph [0072).

As to claim 13, Takeda teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]).

As to claim 14, Tasaka et al. teach release agents/plasticizers/sliding agents are added to the dope solution (col. 15, lines 14-51; col. 17, lines 61-67). One of ordinary skill would have been motivated to add these materials, as taught by Tasaka et al., for the purpose of adjusting mechanical properties (col. 15, lines 15-18).

As to claims 15 and 16, Takeda teaches the solvent is a mixture containing dichloromethane/methylene chloride and alcohol/ethanol and that the alcohol/ethanol is at more than 8 wt. % (paragraph [0101]). Takeda also teaches that the alcohol has from 1 to 4 carbon atoms (paragraph [0082]).

As to claim 17, Tasaka et al. teach acids in the dope solution (col. 13, lines 9-29; col. 15, lines 15-20). Therefore it would have been *prima facie* obvious to one of ordinary skill in the art to employ acids in the doping solution because as taught by Tasaka et al. they can be effective plasticizers (col. 15, lines 15-20) and because as taught by Tasaka et al. they are regularly used in the initial reaction to make the cellulose acylate and would therefore still be present to some degree in the doping solution unless actively removed.

As to claim 18, Takada teaches the polymer is cellulose acylate (paragraph [0007]).

Response to Arguments

Applicant's arguments filed August 3, 2006 have been fully considered but they are not persuasive.

Applicant's arguments appear to be on the following grounds:

1. The amendment to the claims limits the weight percentage of the remaining solvent to at most 50% and that the references teach solvent levels above 50%, specifically 70 to 120%.

Applicant's arguments are not persuasive for the following reasons.

1. Amended claim 1 recites the remaining solvent is in a range of:

    a. 5 wt. % to (said criterion measure – 5 wt. %),

    or

    b. (said criterion measure + 5 wt. %) to 50%.

The examiner notes that these two ranges are not limited to at most 50%. The "a" ranges could be much higher than 50%, depending on the "criterion measure". It is noted that the "criterion measure" is not limited in the claim. Further, it is not unreasonable, although the examiner acknowledges that it would be atypical, to consider that the "b" range could recite the percentage of solvent with a higher percentage listed first (e.g. 100% to 50%). The examiner further notes that even if the solvent level were limited to at most 50%, Tasaka exemplifies a solvent level of 5% (meeting the limitation of "a") and Takeda exemplifies good results with solvent levels

below 40%. Therefore, as articulated in the rejection above, the teaching and disclosure of Takeda and Tasaka are not limited to a solvent range of 70 to 120%

Conclusion

All claims are rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,844,033 to Shimizu et al. Particularly, col. 16, lines 63-67 teaching acids added to the doping solution and col. 20 lines 50 – col. 21, line 3 teaching residence time on the belt, solvent levels at the time of peeling, the impact of solvent levels on peeling and product quality, and peeling temperatures.

U.S. Patent 6,731,357 to Tachibanna et al. Particularly, col. 8, lines 20-27, teaching that casting speed, solvent content, and peeling tension are known variables that have an impact on film quality.

U.S. Patent 5,663,310 to Shimoda et al.

JPO Patent Publication 2002-028943 to Konica teaches that the thickness of the web and the solvent level impacts the quality of film produced (paragraph [0051])

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager
Examiner
Art Unit 1732

October 25, 2006

CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER
10/25/06